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Club-Foot by Open Incision.

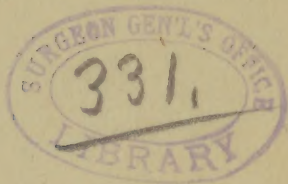
BY



NEWTON M. SHAFFER, M. D.

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REMARKS ON THE  
TREATMENT OF CLUB-FOOT BY OPEN INCISION.\*

BY NEWTON M. SHAFFER, M. D.

THE fact that the treatment of club-foot by open incision is advocated very strongly by Dr. Phelps, and is practiced almost exclusively by him in a class of cases described as "inveterate," coupled with the fact that there are a considerable number of surgeons who maintain that even tenotomy, in the same class of cases, is frequently unnecessary, leads one to think that the principles underlying the treatment of this deformity are not yet fully understood. And no rule has yet been formulated which affords us the least aid in deciding between these two extremes. It seems as if there ought to be some safe medium course.

It has been my own experience to see many cases which Dr. Phelps would describe as "inveterate" yield completely and even rapidly to simple traction, and I have seen apparently simple cases, which promised to yield to traction, require operative measures. If we could say positively and definitely when a club-foot presents to us for treatment that open incision was necessary, or that osteotomy would be

\* Read before the Surgical Section of the Academy of Medicine on the occasion of the discussion of Dr. Phelps's paper, December 12, 1887.

required, or that traction with or without subcutaneous tenotomy or syndesmotomy would answer, we should be much nearer the solution of a difficult problem. But surgeons look at this matter from widely different standpoints, and, depending upon their education and their successes and failures with the conventional methods, they are inclined, I think, to adopt a pessimistic view when they contemplate the indifferent results so frequently obtained by the methods which have been very generally taught since the days of Stromeyer.

I think I can very safely say that it is quite exceptional, in both my private and public practice, to find a case of congenital club-foot which has not been operated upon once or oftener before it came under my care. It seems to be safe to say that *failure is the rule after tenotomy and the use of conventional methods*; or, to put the matter in other words, as success is not very often obtained by the methods advised in our standard works, it is not surprising that osteotomy and open incision in the treatment of club foot should have been among the developments of modern and progressive surgery.

My experience leads me to say that, in the great majority of cases, neither open incision nor osteotomy is required. And I base this opinion *not* upon the failure of *others*, but upon my own failures and successes in my attempts to test and perfect a new method of mechanical treatment based upon a study of the mechanics of the normal foot, and a further study of the changed relations which occur in the conditions under consideration. In making these tests, and in estimating the effects of properly applied traction, I have used my apparatus in some instances where there was more than a legitimate doubt as to its propriety, and have failed on some occasions; but in some cases that had been condemned to osteotomy or open



incision, and in one case where amputation was proposed, perfect results have been obtained without even tenotomy by the use of the simple traction apparatus. These results—failures and successes—were secured while I was experimenting, and during that which might be called provisional work. I feel now that I can crystallize my experience somewhat, and formulate it so that it may, perhaps, be of benefit to others.

We can divide congenital club-foot into three distinct varieties, as applied to the question of surgical and mechanical treatment: (1) *Muscular club-foot*, when there is little or no ligamentous shortening, and no considerable change in the bones of the tarsus; (2) *ligamentous club-foot*, when the ligaments are the principal opponents to a reduction of the deformity; and (3) *osseous club-foot*, when the chief obstacle lies in a greater or less deformity of the tarsal bones, but principally in the astragalus.

Can we distinguish clinically between these three conditions? I am sure we can not always do so. Even if we could, I am prepared to say that the extreme measures of osteotomy and open incision would be called for very rarely. We can not determine, even in a case described by Dr. Phelps as "inveterate," that the cause of the deformity can not be removed by simple traction, or by traction and subcutaneous tenotomy, or by traction, subcutaneous tenotomy, and subcutaneous syndesmotomy. We can perhaps gauge the muscular resistance, but we can not duly estimate either the ligamentous or the bony resistance until after we have either elongated the muscular tissue by stretching it, or gained position by lengthening the tendons by cutting them; and if the muscular resistance, and especially if the muscular and ligamentous resistance, has been removed subcutaneously, the condition is a very rare one (under the age of fourteen years), in my experience (the same opportunity

being given for observation that exists after open incision has been performed), that does not yield to subsequent traction.

I think it a safe rule to make the diagnosis of muscular, ligamentous, or bony club-foot by exclusion. Use an efficient traction apparatus (which is the best one I know of to follow up subcutaneous tenotomy and syndesmotomy) for a sufficient length of time to determine whether the deformity will yield to traction alone. It will do so in many so-called "inveterate" cases. If traction fails, divide the tendons and ligaments subcutaneously, and follow up the operation by vigorous traction, applied systematically, as laid down in my paper on "Traction,"\* already published.

If these rules are consistently followed, I think even the most skeptical will be convinced that "open incision" and "osteotomy" are operations very rarely called for in the treatment of club-foot.

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\* See "New York Medical Journal," March 5 and 12, 1887, "The Use of Traction in the Treatment of Club-foot."



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